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LAND MANAGEMENT U.S. DEPARTMENT OF THE INTERIOR

Endangered and Threatened Species and Related Habitats in Five Southeastern States



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ENDANGERED AND THREATENED
SPECIES
AND RELATED HABITATS
IN
FIVE SOUTHEASTERN STATES

by

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Director, Eastern States
Bureau of Land Management

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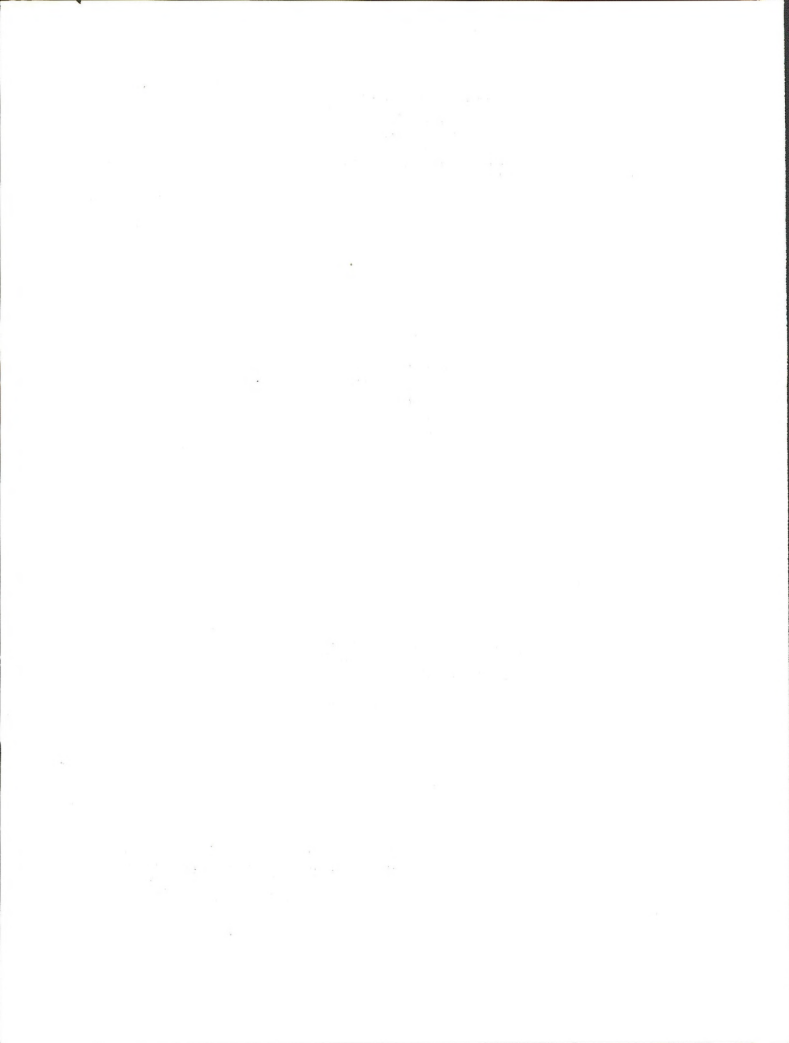


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INTRODUCTION

The purpose of this publication is to denote the occurrence of endangered and threatened species by county in five southeastern states, and to relate these species to major forest types and plant successional stages. Specifically, the book can be used to identify areas where endangered species may exist, based on the presence of certain vegetative types. An illustration of the publication's use would be as follows: A government employee must prepare an environmental report on a specific tract of land in Shelby County, Alabama. He checks the maps to see which species occur in the county. Visiting the tract, he finds an oak-hickory forest. He then checks the publication again, and notes which species are listed as using this forest type. He can then read the brief life history information on these species, including critical elements of their habitat. He now has the basic information necessary to make sound environmental decisions.

Alabama, Arkansas, Florida, Louisiana, and Mississippi were chosen for this publication because of the Bureau of Land Management's involvement in the leasing of federally owned oil and gas, coal and phosphate in these states.

The concept of relating endangered species to vegetation stemmed from the paper entitled *The Relationship of Terrestrial Vertebrates to Plant Communities and Their Successional Stages* by Jack Thomas et al., presented at the Symposium on Classification, Inventory, and Analysis of Fish and Wildlife Habitat, January 17-24, 1977. The life-form method, used by Thomas et al. and recommended by BLM, was modified for this publication. Tables relating the number of different habitats used to the vulnerability of the wildlife species were eliminated because they did not give a true vulnerability rating

to many of the endangered species. Loss of habitat or habitat specialization is not always the reason for the high vulnerability of a species. For example, the peregrine falcon and the brown pelican are very vulnerable to pesticide residues; this vulnerability, not the destruction of habitat, is the main reason for their decline.

The major forest types used in several tables were taken from *A Forest Atlas of the South*, published by the Department of Agriculture, U.S. Forest Service, 1969.

Because of space limitations, this manual covers only federally listed endangered and threatened species. It does not include species listed as endangered by states. Several endangered species of whales, which live in the ocean off the coasts of the five states involved, have also been excluded, since they cannot be related to terrestrial vegetation and are not directly affected by land alterations.

About 184 animals and over 300 plants are being considered by the Office of Endangered Species, Fish and Wildlife Service for endangered or threatened status in the five state area. These species are classified as candidates, proposed species, or review species. They have not been included in this manual but should be added if future legislation adds them to the Federal list of endangered and threatened species.

DISCUSSION

The increasing environmental awareness and concern of the American people has increased the demand that land managers make sound environmental decisions. New laws, regulations, and court actions have increased the complexity of land management. Environmental impact statements, land use planning documents, and environmental assessment reports are just a few examples of the complex procedures of environmental decision making.

Predicting the consequences of the action is an important part of any decision making process. Altering the habitat of an endangered species, or allowing the present vegetative community to advance to the next successional stage, will have certain consequences. The problem in the past has not been lack of knowledge concerning the habitat of endangered species, but the presentation of the data so as to reveal the present and future implications of habitat alterations. By relating each species to forest type and successional stage, and presenting life history data unique to that species, one can predict how it will be affected by a change in the habitat.

We have tried to present this information so as not to overwhelm the general planner with detail, yet provide the wildlife specialist with sufficient information to address specific problems or questions.

MAMMALS

Table 1. Species Orientation by Major Forest Type
 X= Reproduction O= Feeding

	White Pine Hemlock	Longleaf- Slash Pine	Loblolly- Shortleaf Pine	Oak- Pine	Cedar	Oak Hickory	Oak-gum Cypress	Non-Typed Less Than 10% Forest	Total Forest Types	
									Reproduction	Feed
Red Wolf	0	X 0	0	X 0		0	0	X 0	3	7
Florida Panther	0	X 0	0	0	0	X 0	0	X 0	3	8
Gray Bat			0	0		0			0	3
Indiana Bat			0	0		0			0	3
Key Deer								X 0	1	1
Florida Manatee								X 0	1	1

MAMMALS

Table 2. Species Orientation by Successional Stage
 X= Reproduction 0= Feeding

	Grass- Forb	Brush- Seedling (0-10 Yrs.)	Pole- Sapling (11-39 Yrs.)	Young (40-70 Yrs.)	Mature (80-159 Yrs.)	Old (160+ Yrs.)	Number of Stages in Which Species Occurs	
							Reproduction	Feeding
Red Wolf	X 0	X 0	0	0	0	0	2	6
Florida Panther	0	0	X 0	0	0		1	5
Gray Bat	0					0	0	2
Indiana Bat	0					0	0	2
Key Deer	0	X 0					1	2
Florida Manatee							0	0

MAMMALS

Table 3. Life History Data

Key Habitat Components*
 + = primary habitat
 - = occasional habitat

SPECIES	MAIN FOOD ITEMS	HOME RANGE/ SEASONAL MOVEMENTS	LITTER SIZE	CRITICAL HABITAT NEEDS	Coastal Strand	Dry Prairie	Pine Flatwoods	Sand Pine Scrub	Longleaf pine-Oak	Mixed Hardwoods-Pine	Hardwood Hammocks	Tropical Hammocks	Coastal Marshes	Freshwater Marshes and Wet Prairies	Scrub Cypress	Cypress Swamps	Mangrove Swamps	Marine-Freshwater	Sand-Mud Flats	Caves
RED WOLF	rabbits, nutria, carrion	range over an area as great as 45 mi.	3-4 young	uses a wide variety of habitats; needs large tracts of land	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
FLORIDA PANTHER	deer, small mammals	may travel more than 20 miles	2-6 young	occupies many ter- restrial habitats	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GRAY BAT	insects, mayflies	migrate between summer & winter caves, FL-AL	1 young per year	cave temperature critical; summer 13 ^o C. winter 6-9 ^o C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
INDIANA BAT	insects	some migrate 300 miles	1 young per year	cave temperature critical; breeding season 1 st wk. Oct.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
KEY DEER	red mangrove, plants	males - 300 acres; females - 130 acres	1-2 young per year	fresh water supply critical on islands	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FLORIDA MANATEE	water hyacinth, submerged vascular plants	some migrate hundreds of miles, others remain in one area	1 young every 2-2½ yrs.	require clean, sluggish rivers, shallow estuaries, and salt water bays	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-

*adapted from *Rare & Endangered Biota of Florida*, C.H. Pritchard, 1978

BIRDS

Table 4. Species Orientation by Major Forest Type
X= Reproduction O= Feeding

	Wh. Pine- Hemlock	Longleaf- Slash Pine	Loblolly- Shortleaf Pine	Oak- Pine	Cedar	Oak- Hickory	Oak-Gum Cypress	Non-typed Less than 10% Forest	Total Forest Types Reprod. Feed.
Ivory-billed Woodpecker		X O	X O	X O		X O	X O		5 5
Red-cockaded Woodpecker		X O	X O	X O					3 3
Brown Pelican								X O	1 1
Arctic Peregrine								X O	1 1
Bachman's Warbler		O	O			X O	X O	O	2 5
Sandhill Crane								X O	1 1
Eskimo Curlew								X O	1 1
Bald Eagle	X	X	X	X			X	O	5 1
Cape Sable Seaside Sparrow								X O	1 1
Dusky Seaside Sparrow								X O	1 1
Everglade Kite								X O	1 1

BIRDS

Table 5. Species Orientation by Successional Stage
X= Reproduction 0= Feeding

	Grass- Forb	Brush- Seedling (0-10 yrs)	Pole- Sapling (11-39 yrs)	Young (40-79 yrs)	Mature (80-159 yrs)	Old (160+ yrs)	Number of Successional Stages in which species occurs	
							Reproduction	Feeding
Ivory-billed Woodpecker					X 0	X 0	2	2
Red-cockaded Woodpecker					X 0	X 0	2	2
Brown Pelican			X	X			2	0
Arctic Peregrine	X 0	0	0			0	1	4
Bachman's Warbler		X 0	X 0				2	2
Sandhill Crane	X 0				X 0		2	2
Eskimo Curlew	X 0						1	1
Bald Eagle					X	X	2	0
Cape Sable Seaside Sparrow	X 0						1	1
Dusky Seaside Sparrow	X 0						1	1
Everglade Kite	X 0						1	1

BIRDS

Table 6. (continued) Life History Data

SPECIES	MAIN FOOD ITEMS	HOME RANGE/ SEASONAL MOVEMENTS	CLUTCH SIZE	CRITICAL HABITAT NEEDS	Key Habitat Components*																
					Coastal Strand	Dry Prairie	Pine Flatwoods	Sand Pine Scrub	Longleaf Pine-Oak	Mixed Hardwood-Pine	Hardwood Hammocks	Tropical Hammocks	Coastal Marshes	Freshwater Marshes and Wet Prairies	Scrub Cypress	Cypress Swamps	Hardwood Swamps	Mangrove Swamps	Open Water	Sand-Mud Flats	
Eskimo Curlew	grasshoppers, cutworms, grubs	migrates from Arctic through south	4 eggs	sand & gravel bars for roosting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bald Eagle	fish, carrion, turtles	57 acre territory	2 eggs	large mature trees for nesting	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cape Sable Seaside Sparrow	insects, spiders	males .7- 16.8 acre territory	3-4 eggs	cordgrass with patches of spike rush, salt grass, & saw grass	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
Dusky Sea- side Sparrow	spiders, snails, cricketts	home range $\frac{1}{2}$ -2 $\frac{1}{2}$ acres year round	3-4 eggs	cordgrass-need un- broken horizon (no clumps of trees)	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
Everglade Kite	freshwater apple snail (only food)	nomadic nest in loose colonies	2 eggs	freshwater marshes; most specialized feeding habits of any raptor	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-

*adapted from *Rare and Endangered Biota of Florida*, Pritchard, 1978.

REPTILES & AMPHIBIANS

Table 7. Species Orientation by Major Forest Type
 X= Reproduction 0= Feeding

	Wh. Pine- Hemlock	Longleaf- Slash Pine	Loblolly- Shortleaf Pine	Oak- Pine	Cedar	Oak- Hickory	Oak-Gum Cypress	Non-Typed Less Than 10% Forest	Total Forest Types Reprod.	Feed
American Alligator								X 0	1	1
Eastern Indigo Snake		X 0	X 0						2	2
Loggerhead Turtle								X 0	1	1
Red Hills Salamander				X 0		X 0			2	2
Atlantic Salt Marsh Snake								X 0	1	1
Green Turtle								X 0	1	1
Leatherback Turtle								X 0	1	1
Kemp's Ridley Turtle								X 0	1	1
American Crocodile							X	X 0	2	1
Pine Barrens Tree Frog					X 0				1	1
Hawksbill Turtle								X 0	1	1

REPTILES & AMPHIBIANS

 Table 8. Species Orientation by Successional Stage
 X= Reproduction 0= Feeding

	Grass- Forb	Brush- Seedling (0-10 yrs)	Pole- Sapling (11-39 yrs)	Young (40-79 yrs)	Mature (80-159 yrs)	Old (160+ yrs)	Number of Successional Stages in Which Species Occurs	
							Reproduction	Feeding
American Alligator	X 0			0			1	2
Eastern Indigo Snake		0	X 0				1	2
Red Hills Salamander					X 0		1	1
Atlantic Salt Marsh Snake	X 0						1	1
American Crocodile	X	X	X				3	0
Pine Barrens Tree Frog		X 0					1	1

REPTILES & AMPHIBIANS

Table 9. (continued) Life History Data

SPECIES	MAIN FOOD ITEMS	HOME RANGE/ SEASONAL MOVEMENTS	CLUTCH SIZE	CRITICAL HABITAT NEEDS	Key Habitat Components																	
					+	+	+	+	+	+	+	+	+	+	+	+	+					
					Coastal Strand	Dry Prairies	Pine Flatwoods	Sand Pine Scrub	Longleaf Pine-Oak	Mixed Hardwoods	Hardwood Hammock	Tropical Hammock	Hardwood Swamps	Cypress Swamps	Scrub Cypress	Mangrove Swamps	Coastal Marshes	Freshwater Marshes and Wet Prairies	Ponds and Lakes	Streams and Rivers	Marine Environment	
Kemp's Ridley Turtle	crabs, fish, snails, plants	adults restricted to Gulf of Mexico	3 clutches of 110 eggs every 1-2 yrs	entire population nests on a 14.9 mile beach in Mexico	+																	
American Crocodile	fish, crustaceans	unknown	20-80 eggs laid	nest-hardwood thickets, sm. sand beaches & coastal banks	-								+			+	-					+
Pine Barrens Tree Frog	insects, algae	unknown	200 eggs laid-fertilized by male	larvae sensitive to environment									+									
Hawksbill Turtle	algae, mangrove, fish, barnacles	coast from MA-FL & Gulf	several clutches of 160 eggs every 2-3 yrs	undisturbed beaches	+																	+

FISH

Table 10. Life History Data

SPECIES	HABITAT	FEEDING HABITS	REPRODUCTION
Alabama Cavefish	lives in subterranean waters, found only in Key Cave, Alabama	unknown	Reproduction potential very low, time of spawning- unknown
Slackwater Darter	small-medium size streams moderate-slow current, sand, gravel bottom w/ some detritus	unknown	Spawning believed to occur in winter
Spotfin Chub	shallow gravel riffles moderate-fast current medium streams to small rivers	diptera larvae, immature mayflies, stoneflies and caddisflies	Spawning believed to occur from May to July
Leopard Darter	moderately swift water depth 10 in.-3 ft. in rivers over 40 ft. wide	blackfly and mayfly larvae	Spawn in the spring - reproduce for at least three years
Shortnose Sturgeon	estuaries & large rivers lives mostly in brackish or completely saline water	bottom feeder, invertebrates, plant material	Spawns in early spring to the end of April
Okaaloosa Darter	small to medium size streams, sandy substrate with areas of detritus	unknown	Spawns in early April - eggs deposited individually in clumps of algae
Watercress Darter	immediately below springs which contain abundant aquatic vegetation, deep slow moving backwater	aquatic insects, crustaceans, snails	Gravid females found from March to July
Bayou Darter	shallow, moderate-swift water, silt-free riffles large gravel substrate	unknown	Spawning believed to begin during mid to late summer and extends into fall

INSECTS

Table 11. Life History Data

SPECIES	HABITAT	FEEDING HABITS	REPRODUCTION & DEVELOPMENT
Schaus' Swallowtail Butterfly	Tropical hardwood hammocks	Adult food habits unknown, caterpillars feed on the Key lime and sour orange, secondary foods - garden rue, and other citrus trees.	Round pale green eggs are deposited on citrus leaves. Larvae hatch in 4-7 days and molt 4 times in 12 day inter- vals. The pupal stage lasts about 2 weeks and adults emerge in April or May, living about a month.
Bahaman Swallowtail Butterfly	Tropical hardwood hammocks with some second growth stands. Adults prefer shady habitat for feeding and oviposition. Larvae prefer open areas or areas in a state of regrowth.	Adults - nectar from blos- soms of guava, cheese shrub, and wild tamarind. Larvae - new growth of torchwood and wild lime	The rainy season seems to trigger the emergence of adults in April or June. Pale green eggs are deposited on young leaves. The larvae stage is solitary. The pupal stage may remain dormant for 1 or 2 yrs. Adult life span - 1 month.

MUSSELS

Life History Data

Pearly freshwater mussels generally classified as naiad mollusks are very sensitive to environmental changes. A basic understanding of the life history of these mussels is necessary to predict the outcome of any environmental alterations in areas where naiad mollusks occur.

Reproduction in pearly freshwater mussels is very unique. In the female the eggs are moved through the oviducts. By a process not fully understood, the eggs are placed in the water tubes of the gills. These water tubes become modified gill pouches or marsupia. Ciliary action then draws sperm shed by the male into the water tubes and fertilization occurs. The eggs develop into unique larval forms called glochidia. These glochidia are very tiny and one female may produce more than a hundred thousand of them. The female ejects the glochidian into the water where they have a life span of only a few days. During this period they must attach to a fish which they feed on. This parasitic stage lasts from about a week to several months. Many adaptations have evolved in different species of naiads to increase the chances of the glochidia attaching to a fish. Not all species of fish can successfully serve as a host.

After the glochidium has completed its parasitic stage it drops off the fish, often some distance from where it attached. Sexual maturity requires more than a year and some species may live to be 40 years old.

All mussels are filter feeders, feeding mostly on bacteria, small planktonic organisms, and detritus.

The construction of dams has been the major factor in the decline of naiad mollusks. Dams change a river habitat of high oxygen and plentiful food into a slow moving, low oxygen body of water with little food.

Industrial, agricultural, and domestic pollution also have a detrimental effect on these sensitive mussels. Siltation is a big problem for mussels. Not only does silt cover naiad beds making the substrate unsuitable, but silt may clog their incurrent siphons causing suffocation. Any surface disturbances such as clearcutting or mining, occurring upstream from known mussel populations should be closely monitored to insure that silt levels remain low.

MUSSELS

Table 12. Mussel Distribution

MUSSEL	RIVER
Turgid Blossum Pearly Mussel	Tennessee
Alabama Lamp Pearly Mussel	Paint Rock
Cumberland Monkeyface Pearly Mussel	Tennessee
Shiny Pigtoe Pearly Mussel	Paint Rock
Fine-rayed Pigtoe Pearly Mussel	Paint Rock
Pale Lilliput Pearly Mussel	Paint Rock
Tan Riffle-shell Mussel	Tennessee
Orange-footed Pimpleback Mussel	Tennessee
White Warty-back Pearly Mussel	Tennessee
Pink Mucket Pearly Mussel	Tennessee
Fat Pocketbook Pearly Mussel	White, St. Francis

SNAILS

STOCK ISLAND TREE SNAIL (*Orthalicus reses*)

The Stock Island Tree Snail was once found on several islands in the Florida Keys but presently exists only on Stock Island. Real estate development, livestock grazing, and over collecting have contributed to its decline.

The chief food of land snails is the coating of living algae which covers most submerged surfaces. Dead plant material and sometimes dead animal material are also eaten.

Water with a high carbonate content, especially calcium carbonate is important to most land snails. Calcium carbonate is the essential material for shell construction.

PLANTS

CHAPMAN RHODODENDRON (*Rhododendron chapmani*)

Chapman Rhododendron is an evergreen plant reaching about 6 feet tall. Its alternate leaves are elliptical shaped with entire margins. The flowers are dark pink to reddish purple and grow in tight clusters. Flowers bloom in March and April.

Chapman Rhododendron usually grows in the ecotonal region where the drier pine-oak vegetation meets the more moist titi (*Cynilla racemiflora*) bogs.

A pine clearcutting in the early 1970's destroyed a population of Chapman Rhododendron in Gadsden and Liberty Counties, Florida. However, new plants were observed sprouting in the cut area after it had been burned, cultivated, and replanted in pines. This clearcutting may have served to break up the roots or merely reduced the competition causing regeneration of this species.

Until further studies of this plant are completed, logging and clear-cutting should be discouraged in areas where this species occurs. Drainage of adjacent bogs should not be permitted.

GREEN PITCHER PLANT (*Sarracenia oreophila*)

The Green Pitcher plant has a long trumpet shaped cone, which it uses to trap insects. One of the few species of carnivorous plants, this pitcher plant is found in wet, acidic soils along streams or in openings in low woods.

Increased residential, agricultural and silvicultural development threatens the remaining populations. Possible flood control projects, increasing water

pollution, strip mining and road construction all pose threats to the habitat of these unique plants. Like Chapman Rhododendron, the Green Pitcher plant has been a victim of over collecting.

Besides occurring in five counties of Alabama, this species has recently been discovered in Towns County, Georgia.

HARPER'S BEAUTY
(*Harperocallis flava*)

Harper's Beauty may be easily identified by its single yellow flower with six petals, six stamens, and a superior ovary. This perennial herb has stiff grassy leaves similar to other members of the lily family.

Harper's Beauty is found in open pineland bogs and along roadside ditches often associated with Buckwheat tree (*Cliftonia monophylla*) and odorless bayberry (*Myrica indora*). Its range is limited to Franklin and Liberty Counties, Florida within the Apalachicola National Forest. Because this species was added to the endangered list just before this publication was going to press, a separate map showing its location by county has not been added.

KEY TO MAP SYMBOLS

C = Designated Critical Habitat -

An area determined by rulemaking to contain those physical and biological elements necessary for the species survival.

P = Present Range -

Species actually has been sighted or collected in this county during the past 20 years and its occurrence has been documented.

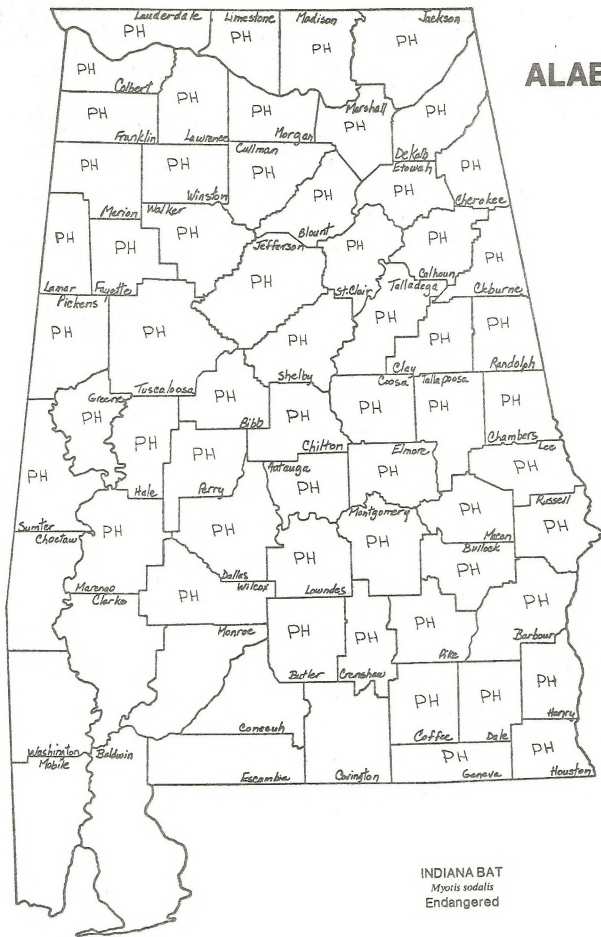
H = Historic -

Distribution in A.D. 1492.

● = Recent Nesting Site -

An area where a pair of birds have been observed nesting during the past 20 years.

ALABAMA



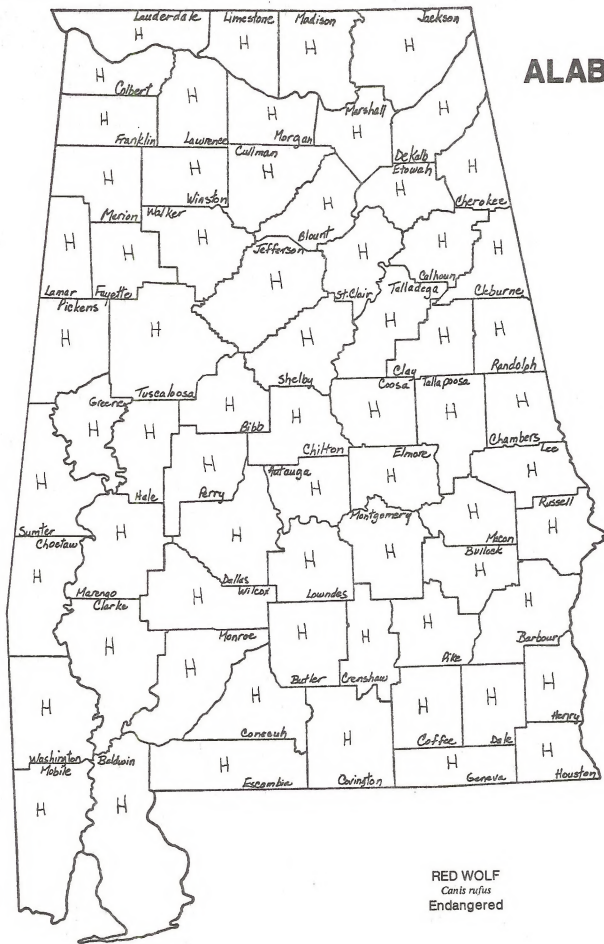
INDIANA BAT
Myotis sodalis
Endangered

ALABAMA



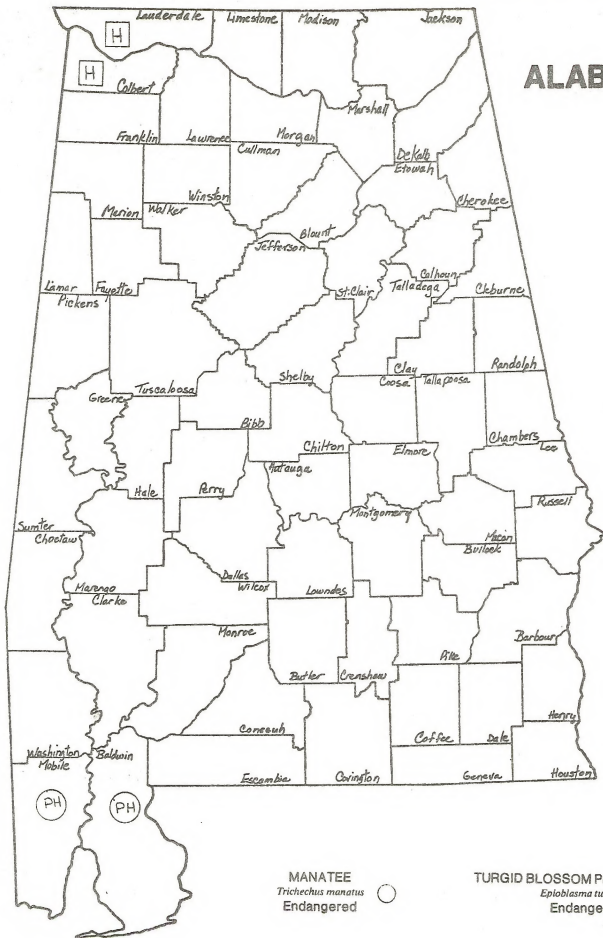
GRAY BAT
Myotis grisescens
Endangered

ALABAMA

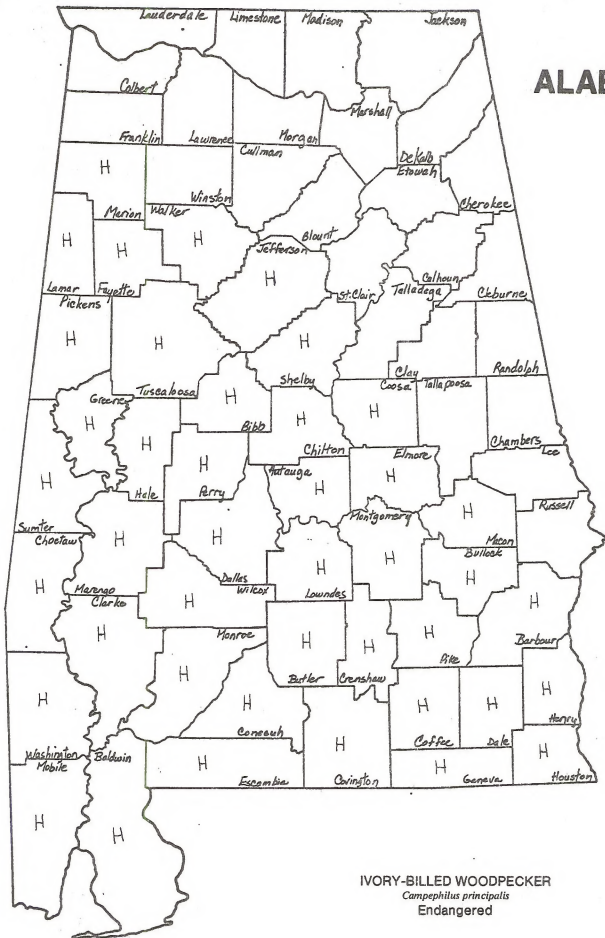


RED WOLF
Canis rufus
Endangered

ALABAMA

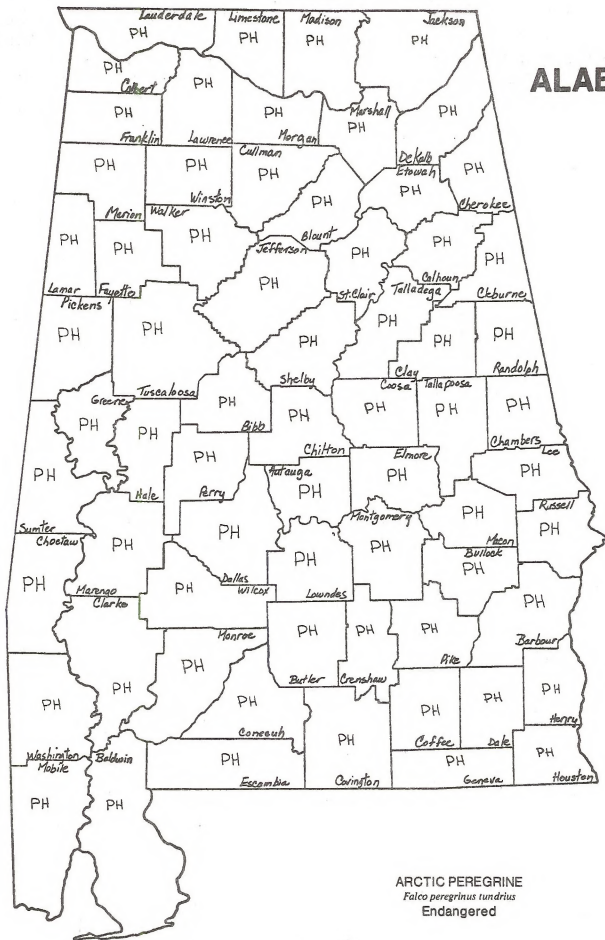


ALABAMA



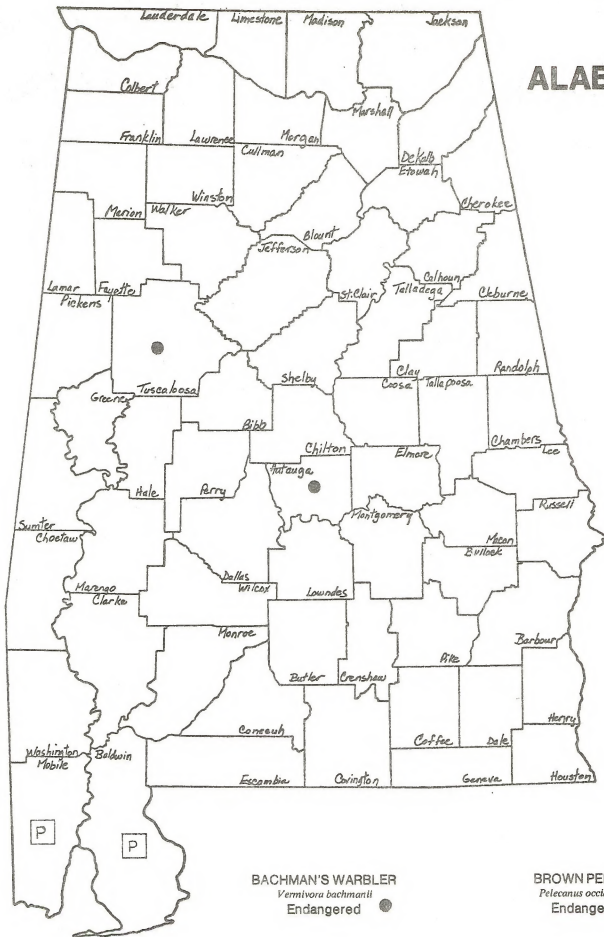
IVORY-BILLED WOODPECKER
Campethilus principalis
 Endangered

ALABAMA



ARCTIC PEREGRINE
Falco peregrinus tundrius
 Endangered

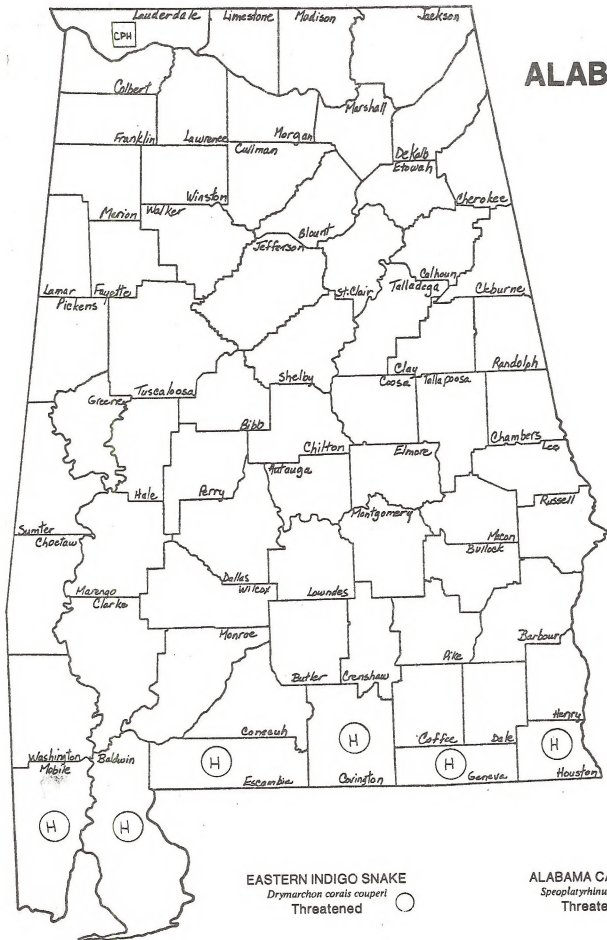
ALABAMA



BACHMAN'S WARBLER
Vermivora bachmanii
 Endangered ●

BROWN PELICAN
Pelecanus occidentalis □
 Endangered

ALABAMA



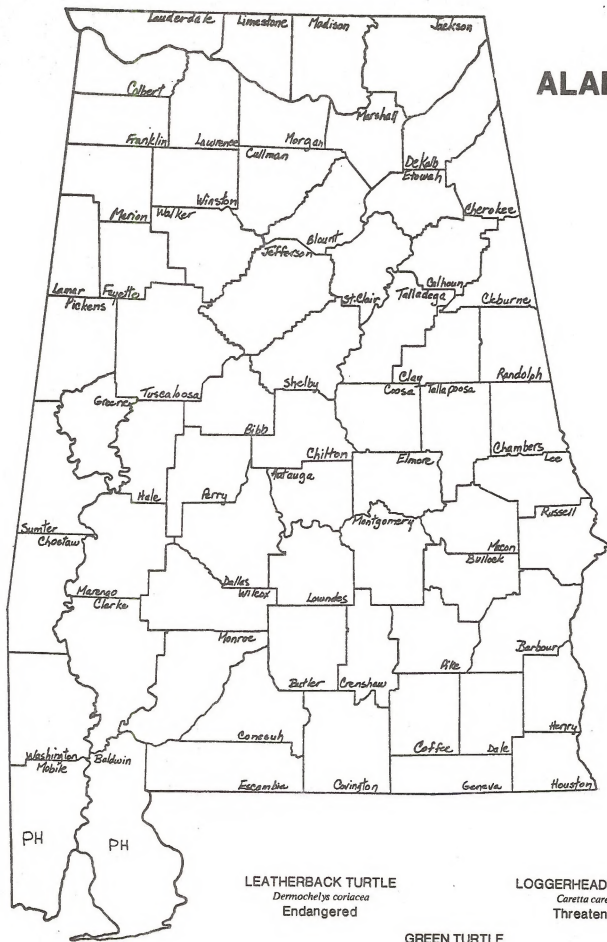
ALABAMA



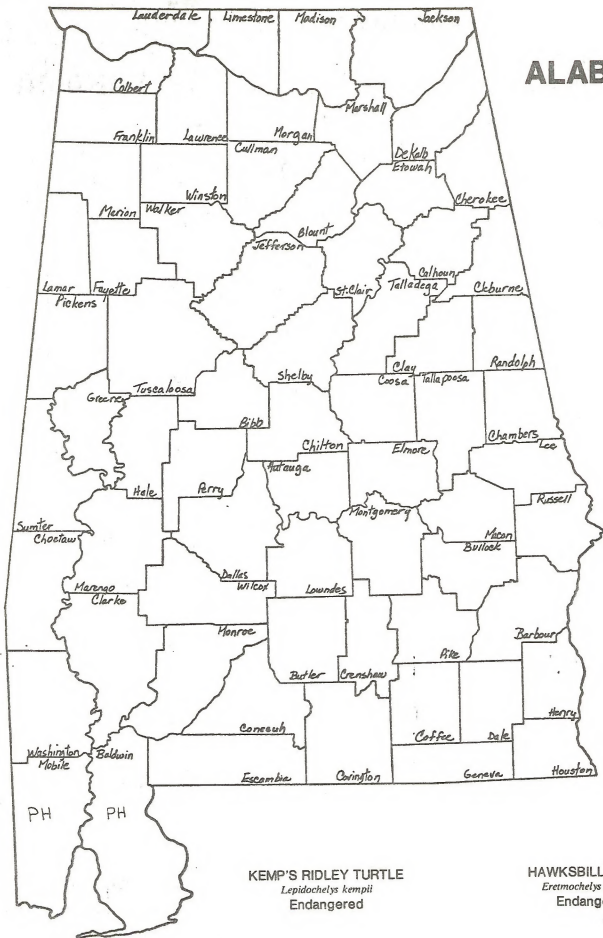
SLACKWATER DARTER
Etheostoma boschungii
 Threatened ○

WATERCRESS DARTER
Etheostoma nuchale
 Endangered □

ALABAMA



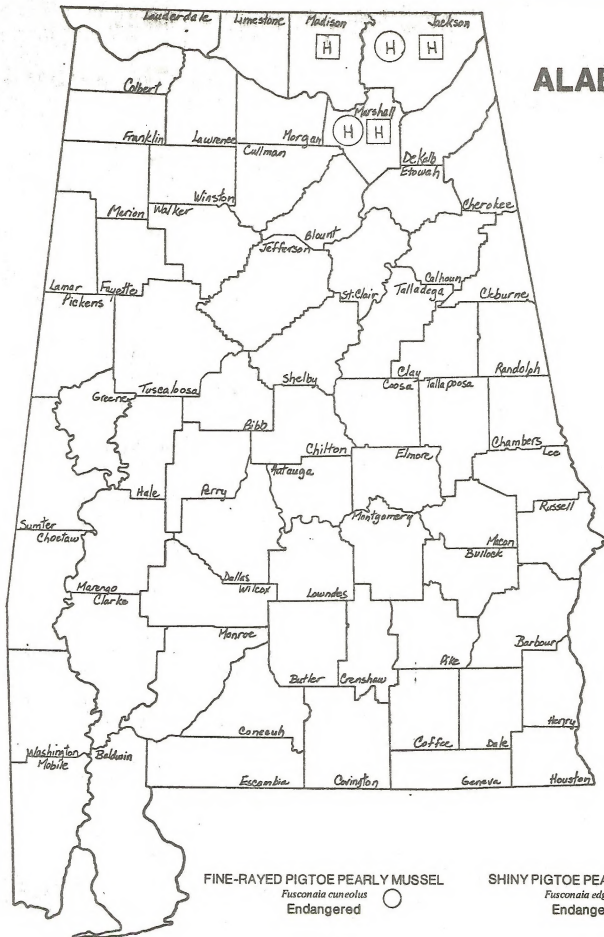
ALABAMA



ALABAMA



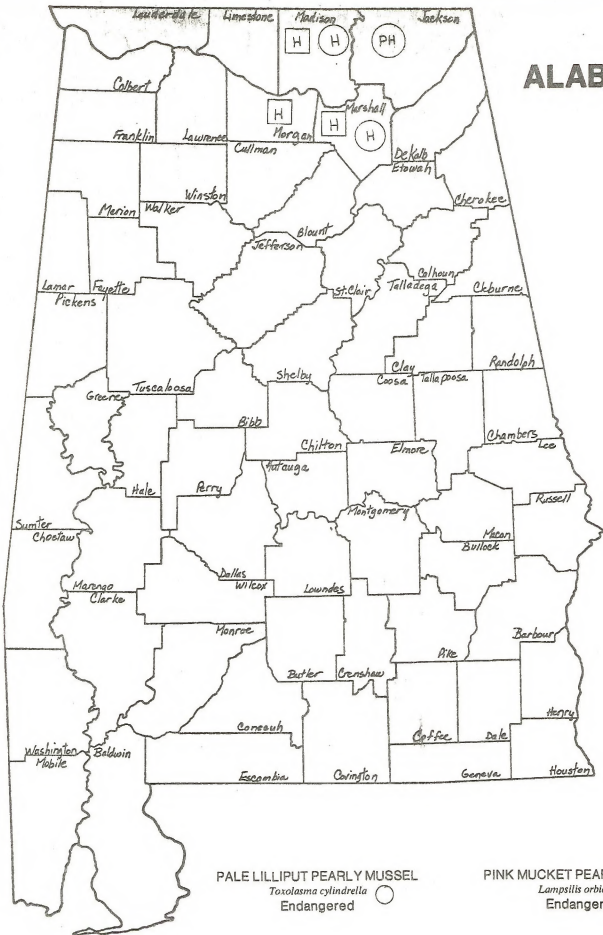
ALABAMA



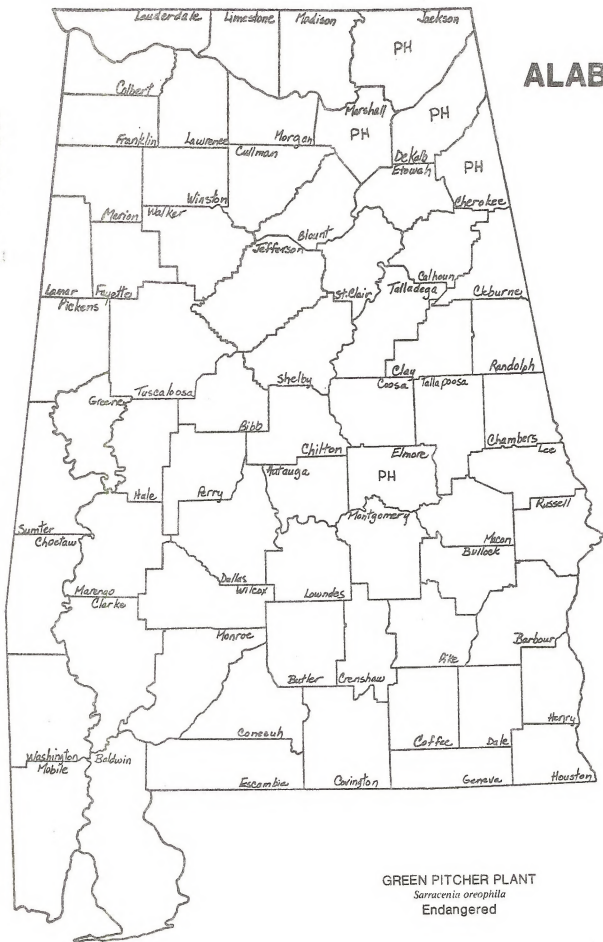
ALABAMA



ALABAMA



ALABAMA



FLORIDA PANTHER
Felis concolor coryi
 Endangered



RED WOLF
Canis rufus
 Endangered



ARKANSAS

RED-COCKADED WOODPECKER

Dendrocopos borealis

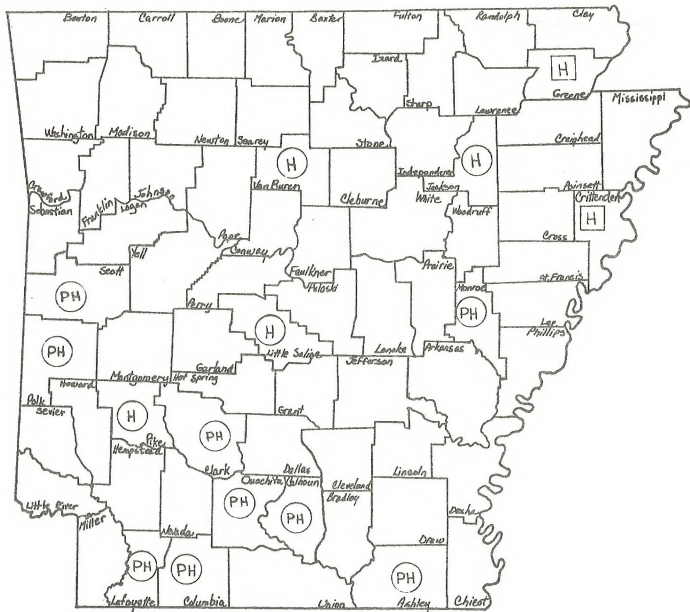
Endangered



BACHMAN'S WARBLER

Vermivora bachmanii

Endangered



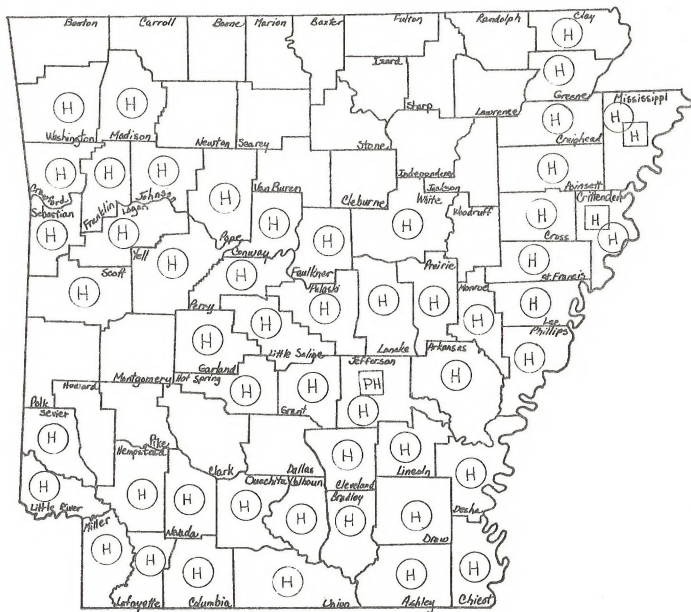
ARKANSAS

IVORY-BILLED WOODPECKER

Campephilus principalis ○
Endangered

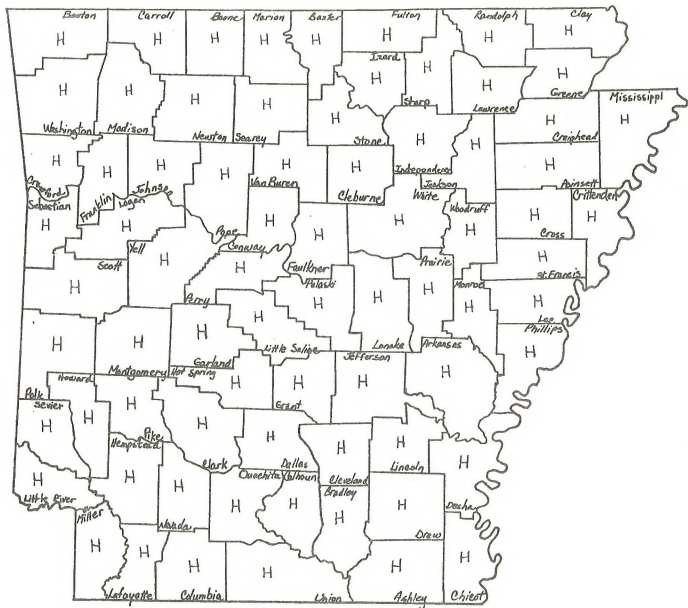
BALD EAGLE

Haliaeetus leucocephalus □
Endangered & Threatened



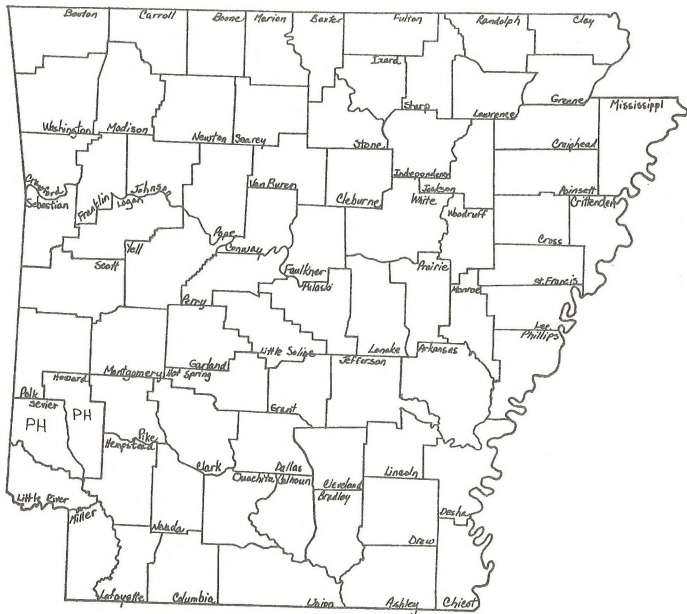
ARKANSAS

ESKIMO CURLEW
Numenius borealis
 Endangered



ARKANSAS

LEOPARD DARTER
Percina pantherina
 Threatened

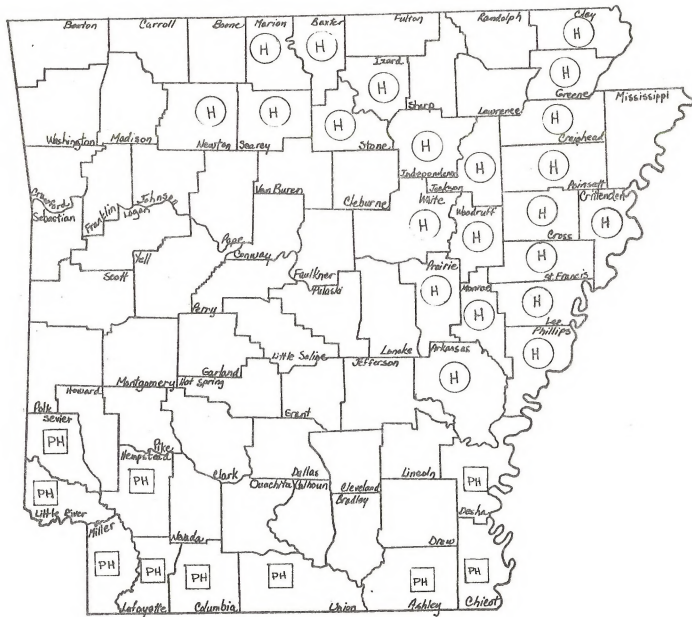


ARKANSAS

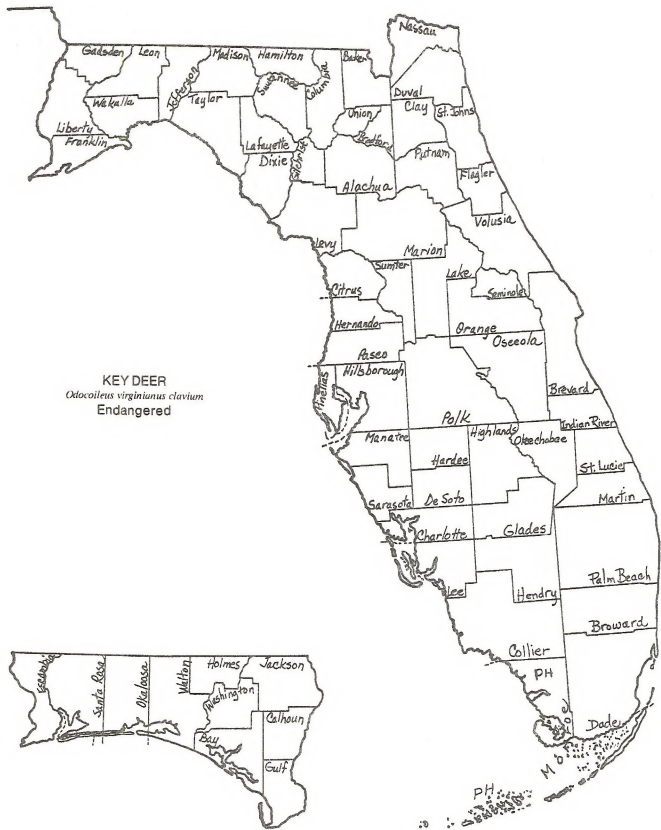
FAT POCKETBOOK PEARLY MUSSEL

Potamius capax
Endangered ○

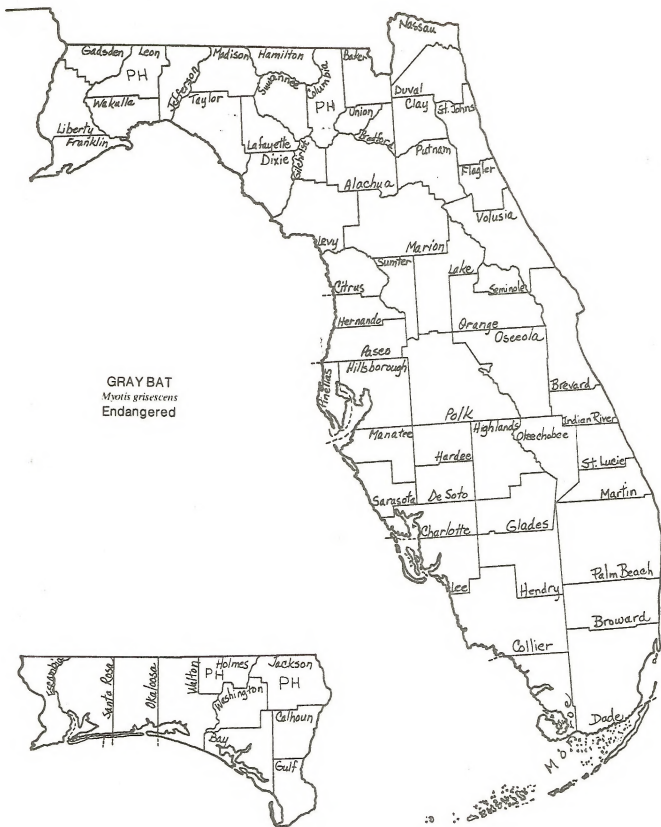
AMERICAN ALLIGATOR
Alligator mississippiensis □
Endangered & Threatened



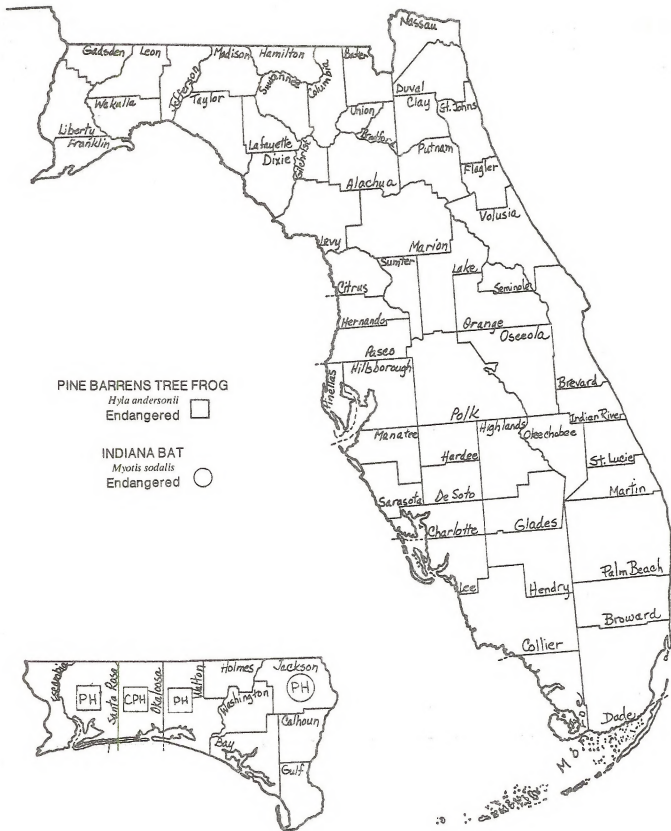
ARKANSAS



FLORIDA

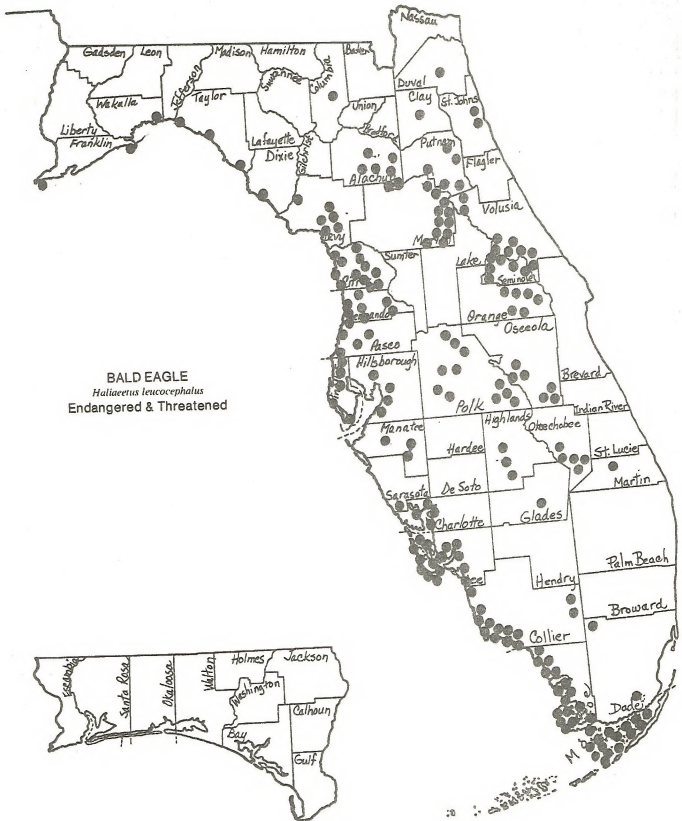


FLORIDA

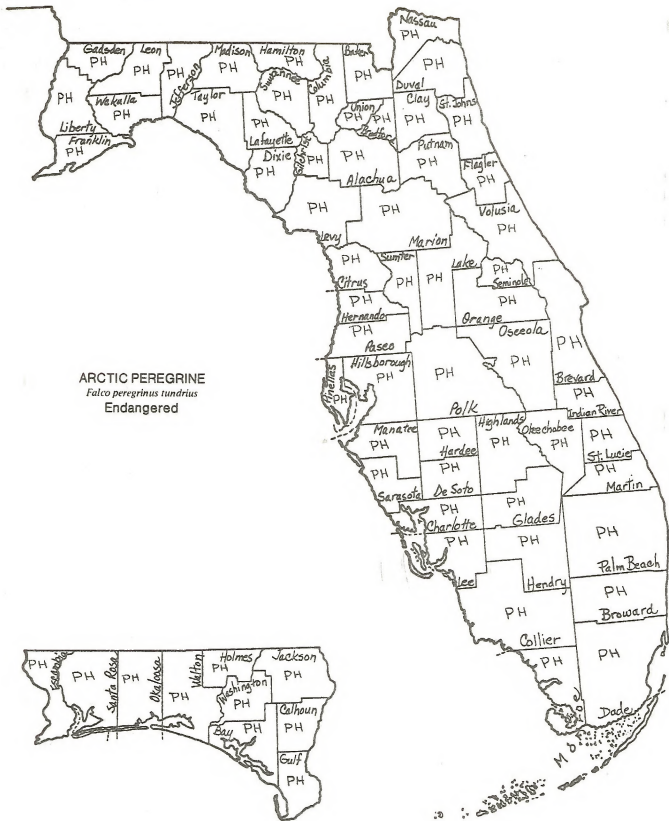


FLORIDA

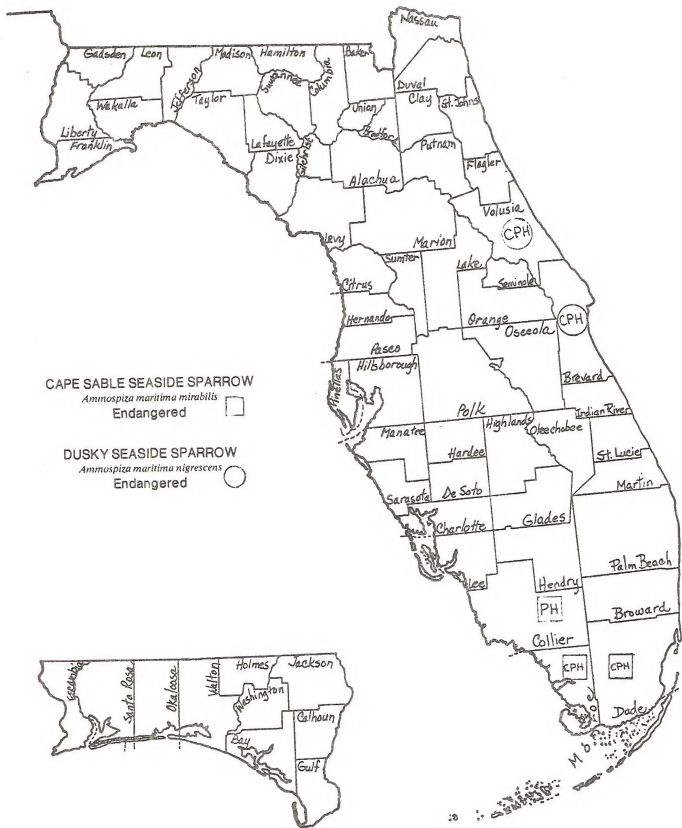
BALD EAGLE
Haliaeetus leucocephalus
 Endangered & Threatened



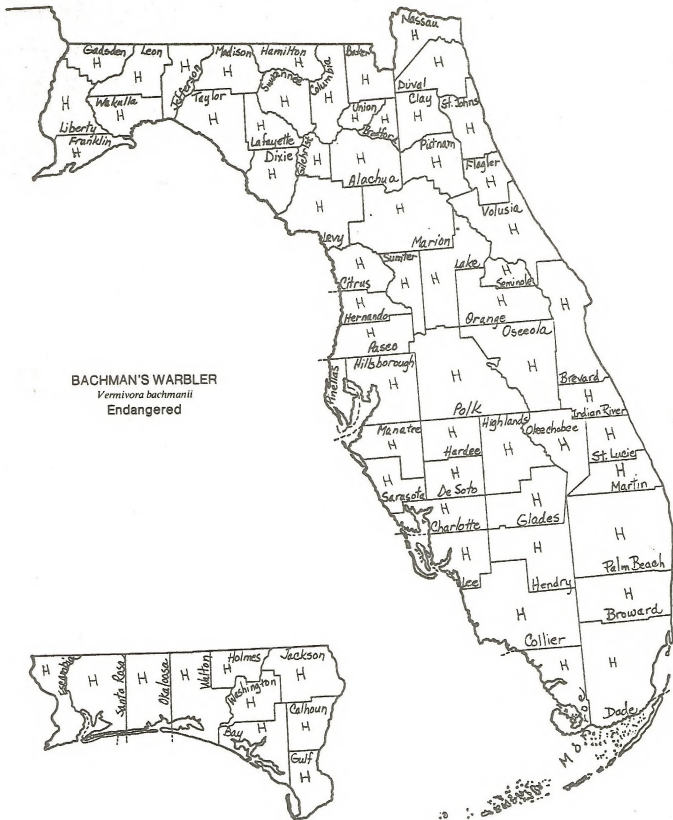
FLORIDA



FLORIDA

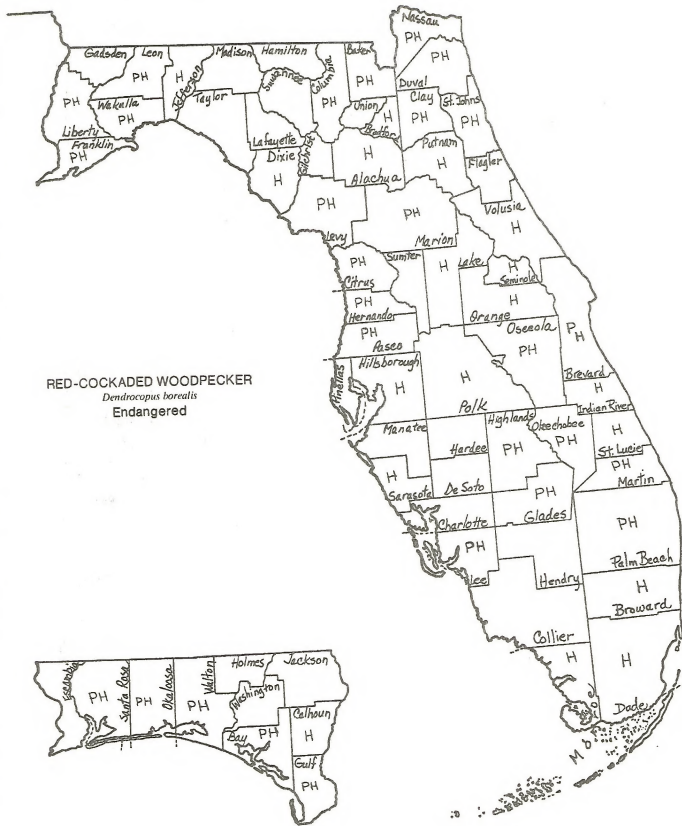


FLORIDA



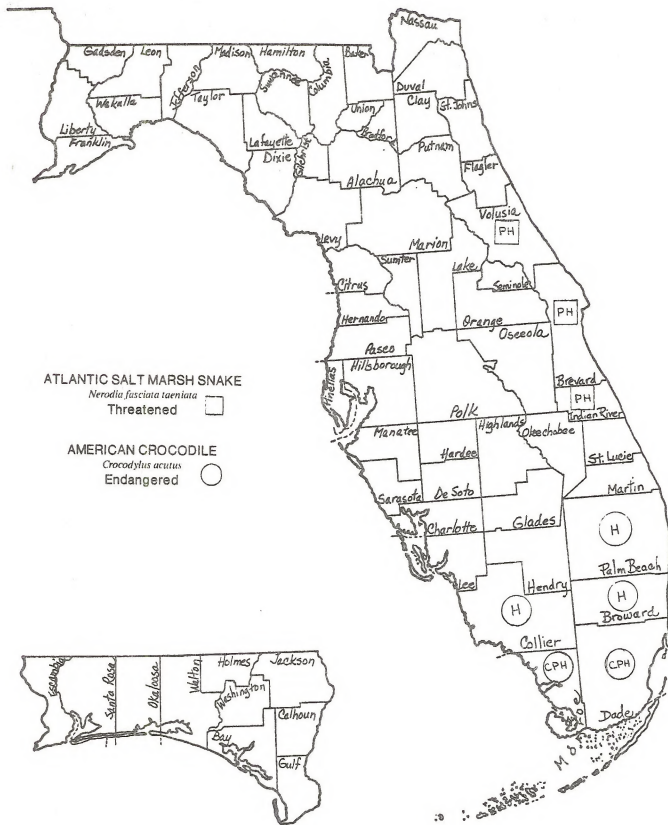
BACHMAN'S WARBLER
Vermivora bachmanii
 Endangered

FLORIDA

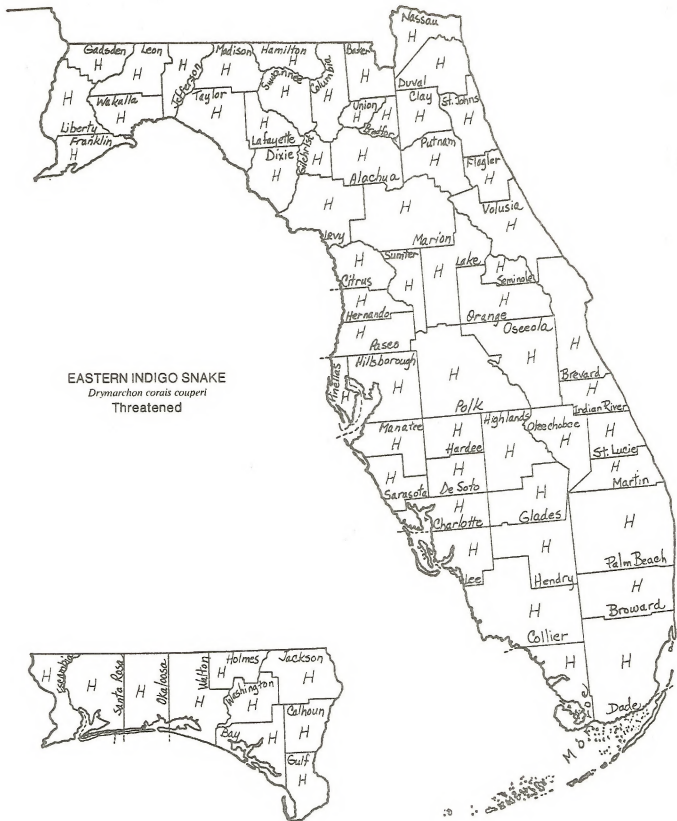


RED-COCKADED WOODPECKER
Dendrocoptes borealis
 Endangered

FLORIDA

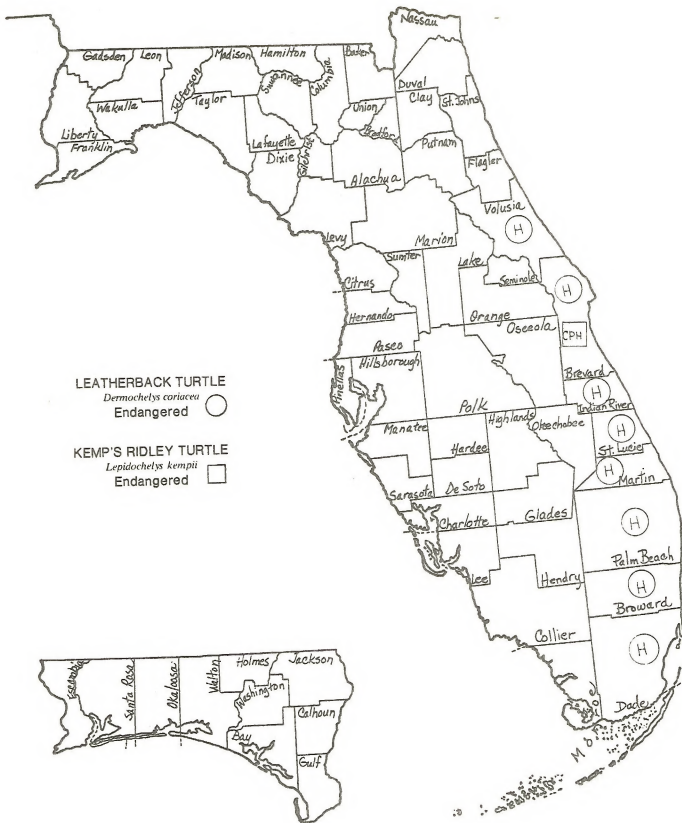


FLORIDA

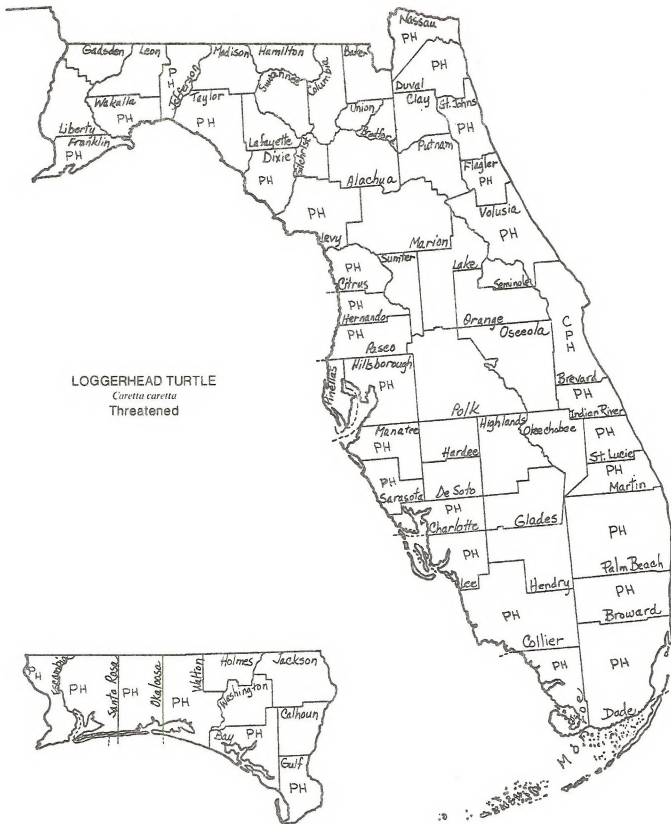


EASTERN INDIGO SNAKE
Drymarchon corais couperi
 Threatened

FLORIDA

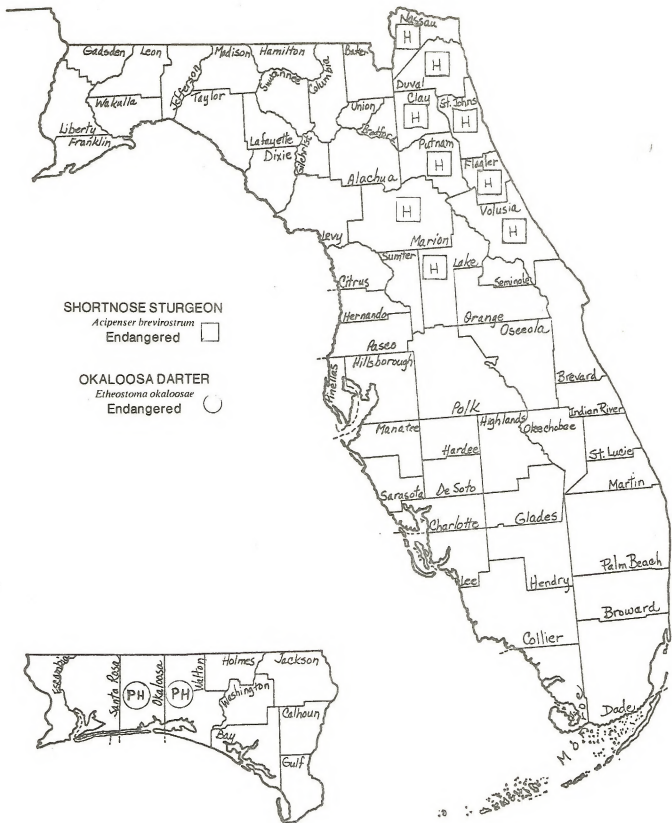


FLORIDA

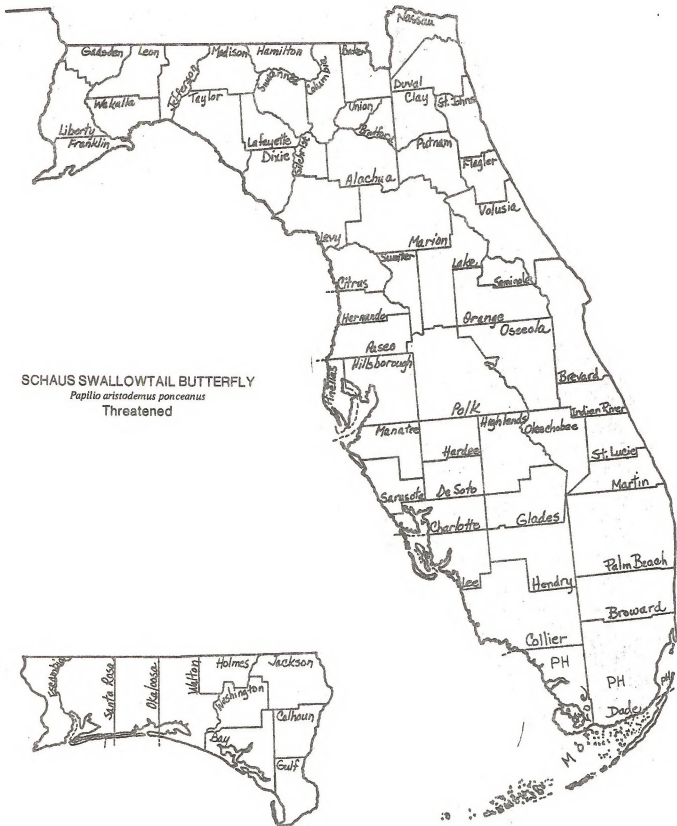


LOGGERHEAD TURTLE
Caretta caretta
 Threatened

FLORIDA

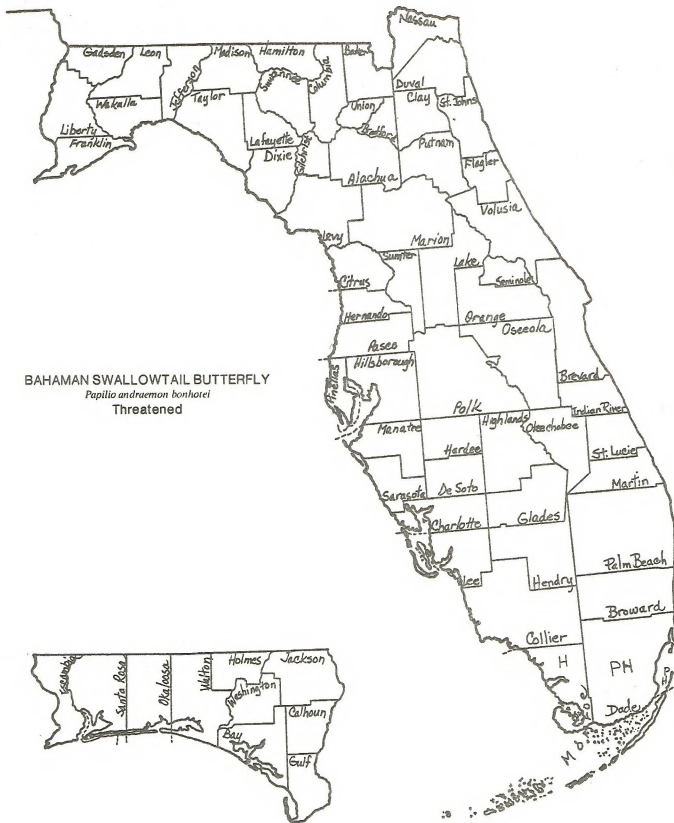


FLORIDA



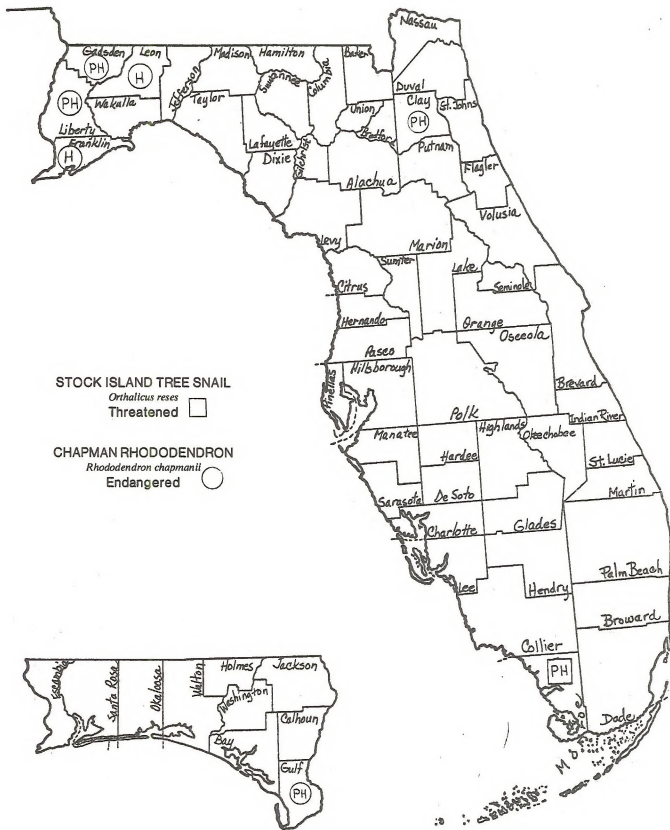
SCHAUS SWALLOWTAIL BUTTERFLY
Papilio aristodemus ponceanus
 Threatened

FLORIDA

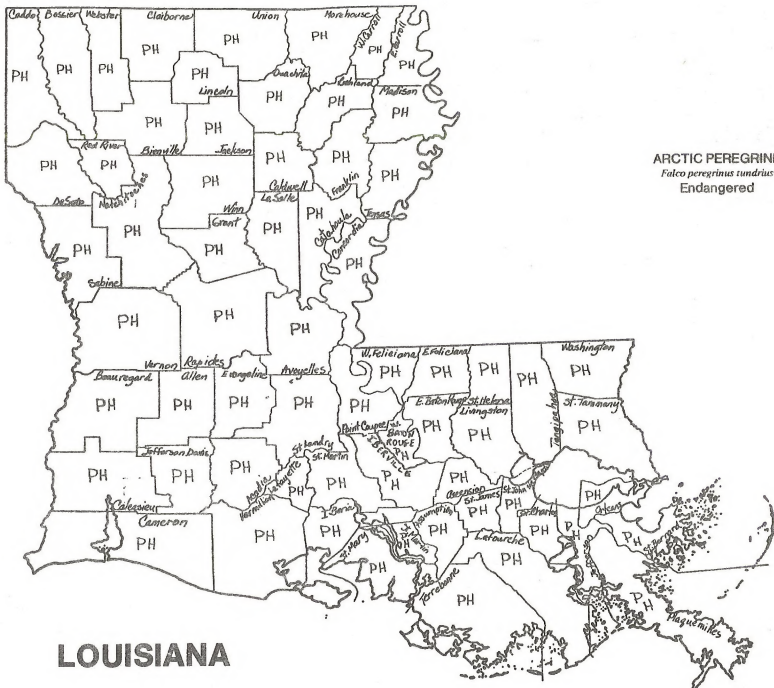


BAHAMAN SWALLOWTAIL BUTTERFLY
Papilio andraemon bonhoti
 Threatened

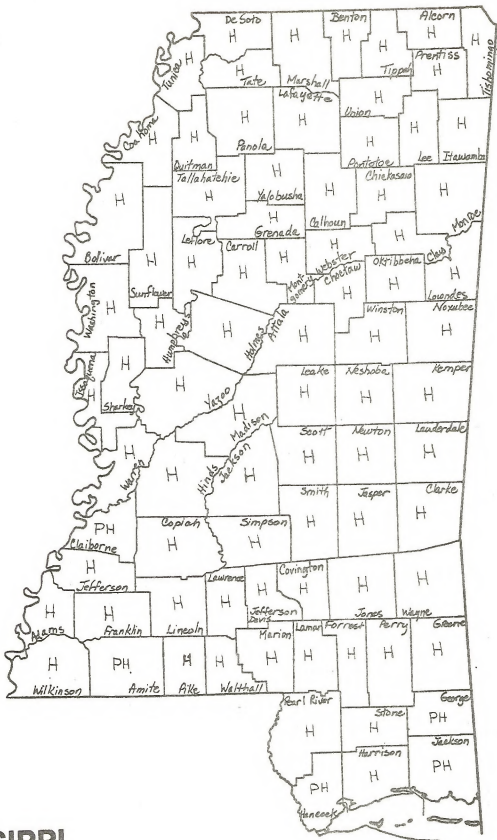
FLORIDA



FLORIDA



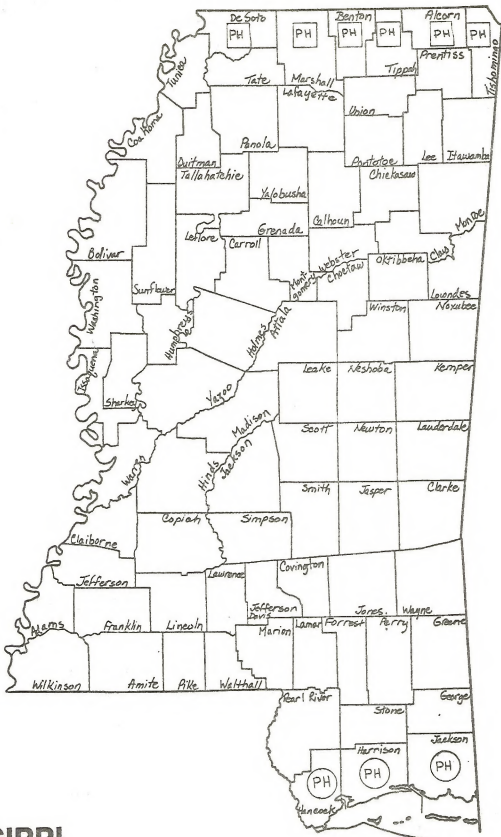
FLORIDA PANTHER
Felis concolor caryi
 Endangered



MISSISSIPPI

GRAY BAT
Myotis grisescens
Endangered □

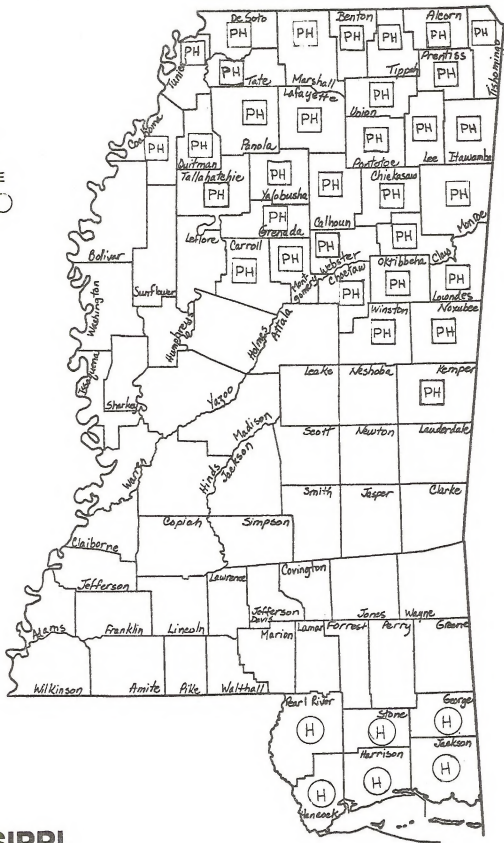
MANATEE
Trichechus manatus
Endangered ○



MISSISSIPPI

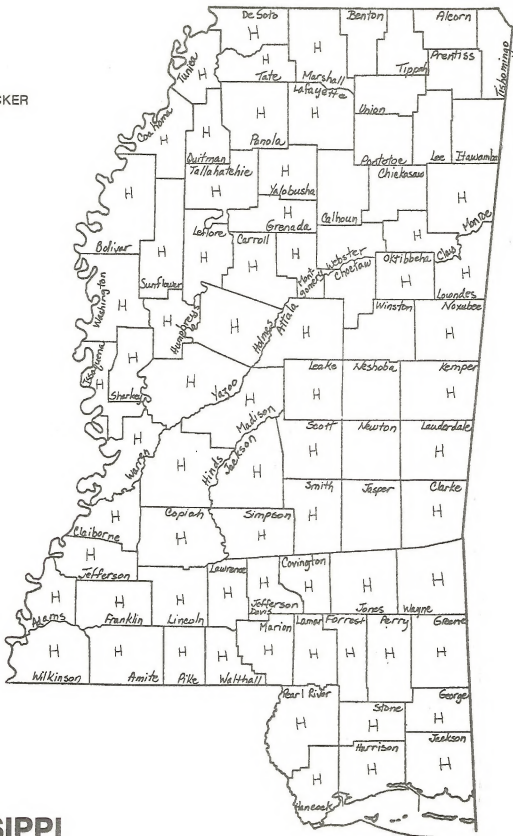
INDIANA BAT
Myotis sodalis
 Endangered □

EASTERN INDIGO SNAKE
Drymarchon corais couperi
 Threatened ○



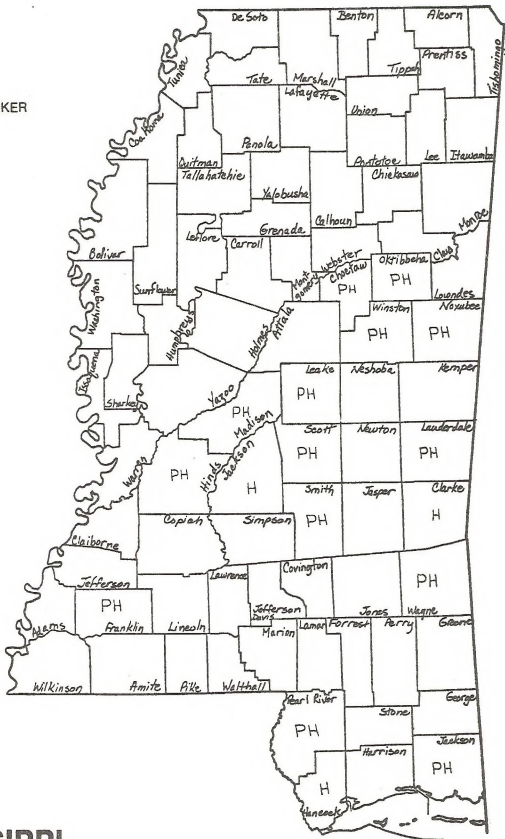
MISSISSIPPI

IVORY-BILLED WOODPECKER
Campephilus principalis
 Endangered



MISSISSIPPI

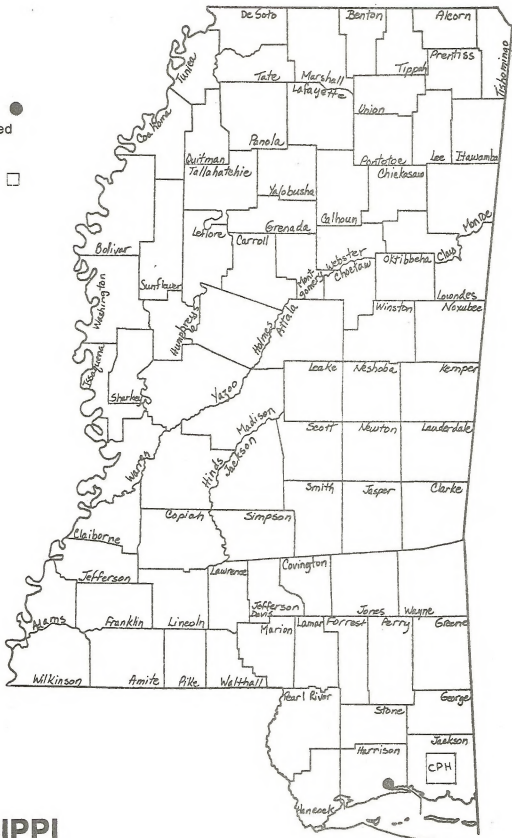
RED-COCKADED WOODPECKER
Dendrocopos borealis
 Endangered



MISSISSIPPI

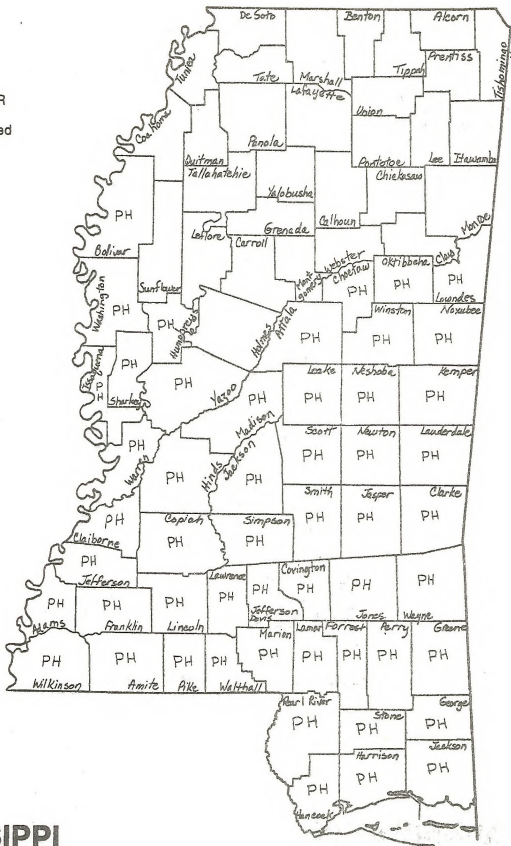
BALD EAGLE
Haliaeetus leucocephalus
 Endangered & Threatened

SANDHILL CRANE
Crus canadensis pulla
 Endangered



MISSISSIPPI

AMERICAN ALLIGATOR
Alligator mississippiensis
 Endangered & Threatened



MISSISSIPPI

LEATHERBACK TURTLE

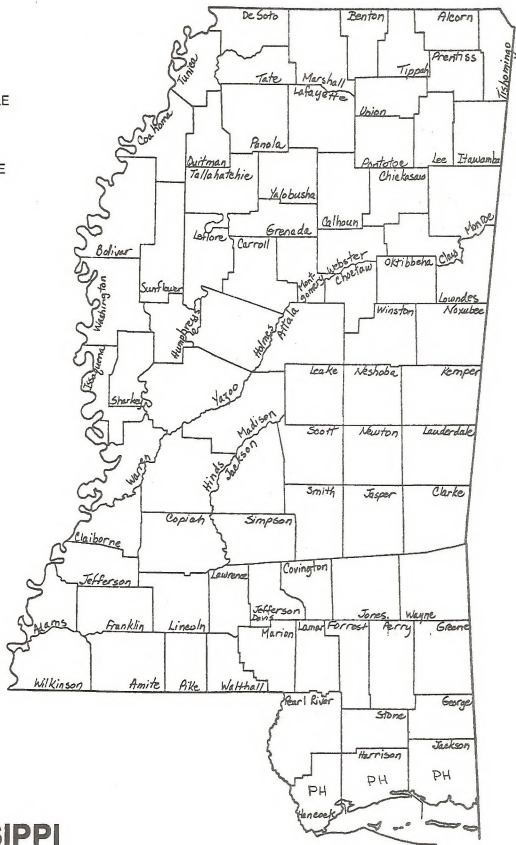
Dermochelys coriacea
Endangered

LOGGERHEAD TURTLE

Caretta caretta
Threatened

GREEN TURTLE

Chelonia mydas
Endangered



MISSISSIPPI

HAWKSBILL TURTLE

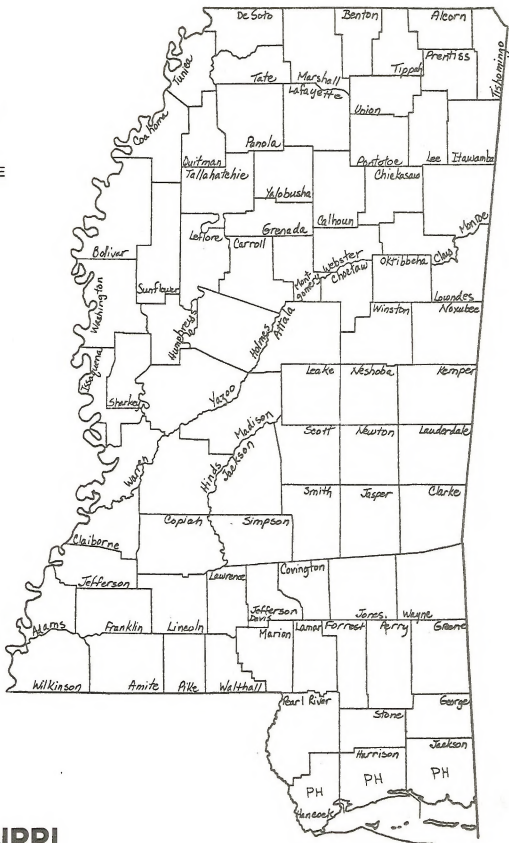
Eretmochelys imbricata

Endangered

KEMP'S RIDLEY TURTLE

Lepidochelys kempi

Endangered



MISSISSIPPI

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threatened species and
ts in five Southeastern

Division	Date Ret'd

DSC 1279-5a (Feb. 1977)

